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ABSTRACT

The teaching of reading as a decoding process was an educational strategy used by the Minicourse 18 model of teacher education. This report analyzes the field data taken from four school test sites and assesses the effectiveness of the strategy. Multivariate Statistical analysis shows the program has a significant effect in course-approved directions of teaching behavior, but reveals little difference on teacher entry and gain scores for central city as opposed to suburban teachers. An independent study that ran concurrently with the Minicourse 18 field tests showed that student achievement favored the use of this strategy. (MC)

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TEACHER EDUCATION through MINICOURSE 18:

TEACHING READING AS DECODING

by

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Introduction: The Minicourse Model of Teacher Education

The Minicourse is a self-instructional, performance-based course for teacher education, based upon microteaching. Microteaching as developed at Stanford consisted of an intern teacher applying a skill in a videotaped lesson with a few pupils, replaying the tape for evaluation and receiving feedback from a supervisor on the lesson, and replanning and reteaching the lesson. The Minicourse adds to the microteaching model the elements of inservice use and auto-instruction. It deletes the feedback of supervisors.

Minicourse skills are identified through a comprehensive literature review. Then these skills are organized sequentially and presented in a course proposal. If the course is approved for development, then decisions are made as to the format of the course. Several media are employed in the development and use of Minicourses, including printed handbooks, and other materials; videotaped, filmed or audiotaped instructional models; and lesson evaluations using videotape or audiotape. Videotaped or filmed models can be produced by the Laboratory's media department.

The Minicourse undergoes three field tests, each of which is followed by the revisions indicated by that test. First is the preliminary field test, conducted with 6-10 local teachers, to find out whether and how the course will work. Also, some trend data are gathered.

The main field test is the primary research study of the Minicourse. Between 50 and 100 teachers test the course. Pre- and post-

measures are used to determine the effect of the course on teachers and on pupils.

Last is the operational field test. This assesses the effectiveness of the course in sites without Laboratory assistance.

Minicourses have been developed in several instructional areas, including questioning, independent learning, reading, and others.

Minicourse 18: Teaching Reading as Decoding

The subject called Reading is considered a content area of school curriculum, but the strategies used in teaching reading skills are an important part of teaching methodology. In June of 1970 the first reading Minicourse was begun. It presents skills for teaching the decoding (pronouncing) portion of reading. (There is another minicourse in the area of reading comprehension).

Over 180 research reports and articles were reviewed before development of the course proposal. The instructional sequences of the course cover grapheme (letter) recognition, phoneme-grapheme (sound-letter) correspondence, decoding larger letter units, use of context clues, and independently solving word identification problems.

The course includes a teacher handbook, a coordinator handbook, pupil pretests for microteaching selection, a packet of materials for use in the microteach lessons, and five instructional lesson films (previously videotapes).

The preliminary field test was conducted with 10 teachers at two schools in San Francisco and Albany, California. Although no hard data were gathered, the teachers indicated that the course was useful, and their suggestions for revisions were adopted.

Then the main field test was scheduled for Chicago; Washington, D.C.; Montgomery County, Maryland; and San Lorenzo, California. (For a copy of the complete report, write for Minicourse 18: Teaching Reading as Decoding, Main Field Test Report, to the Teacher Education Division, Far West Laboratory for Educational Research and Development, 1855 Folsom Street, San Francisco, California 94103).

The four questions of the main field test, and the related findings, were:

1. Will teacher behavior change as a result of Minicourse 18?

The overall behavior changes from the pre-post lessons were analyzed by using the NYBMUL Multivariance computer program to establish univariate F ratios and significance levels for the grand means. Those behaviors not differing significantly were analyzed further with the Ariel t-test Program for Correlated Means, in order to identify pre-post differences within each treatment.

As can be seen from Table 1, comparisons of teacher behavior before and after the course reveal significant changes in course-approved directions in 83% of the teaching behaviors analyzed.

2. Will teacher entry and gain scores differ for central city and suburban teachers?

TABLE 1

GRAND MEAN CHANGES IN PRE-POST BEHAVIOR FROM THE MAIN FIELD TEST OF MINICOURSE 18

(N = 56)

	Behavior Compared	Pre-tape Mean	S.D.	Post-tape Mean	S.D.	F
	Increase considered desirable					
a	1. Matches letter	.32	.86	2.79	2.05	69.29**
a	2. Describes letter	.43	.95	1.23	.87	20.97**
a	3. Finds letter without clues	.16	.71	.89	1.29	12.60**
a	4. Tells letter location	.63	2.28	4.16	4.36	35.92**
b	5. Says and shows word	5.27	6.67	16.77	12.18	42.18**
b	6. Writes and says pupil's word	2.55	4.57	5.11	5.74	6.74*
b	7. Teaches letter variability	1.23	2.92	7.36	6.56	43.34**
	8. Uses similar spelling pattern (T)	1.29	.97	1.27	.80	.01
	9. Uses similar spelling pattern (P)	.95	.88	1.04	.79	.39
c	10. Uses contrasting spelling pattern (T)	1.75	1.31	2.38	1.34	6.36*
	11. Uses contrasting spelling pattern (P)	1.45	1.22	1.80	1.33	2.13
	12. Presents affixes together	.66	.58	.84	.68	1.88
	13. Discusses affix meaning	.61	.78	1.16	1.30	7.27**
	14. Arranges sentence	1.11	1.42	1.64	1.52	4.97**
d	15. Substitutes sentence word	.04	.19	.20	2.45	12.99**
	16. Questions word substituted	.02	.13	.54	1.39	7.65**
	17. Teaches homograph duality	.23	.69	1.64	2.17	23.26**
e	18. Returns to review word	.32	.64	1.02	1.61	8.04**
e	19. Compares with target word	.04	.19	.70	1.61	9.17**
	20. Asks how or why	1.11	1.96	3.68	3.50	22.79**
f	21. Word one letter different	8.38	5.49	11.55	9.12	4.65*
	22. Word from previous parts	1.59	1.41	2.86	2.58	10.17**
	Decrease considered desirable					
c	23. Ignores	.84	1.25	.36	.98	4.97*
c	24. Moves to other pupil	.61	1.07	.55	.99	.07
a	25. Names letter	67.98	42.18	35.95	38.81	52.64**
	26. "Sound says"	8.57	7.25	1.32	1.57	60.53**
b	27. Isolates phoneme (T)	17.89	11.62	1.07	2.83	128.88**
	28. Isolates phoneme (P)	16.05	15.74	.96	2.61	59.24**
	29. Pronounces unnaturally	16.16	14.08	3.25	5.41	55.78**

T = Teacher
P = Pupil

*p < .05
**p < .01

a = Grapheme Recognition
b = Grapheme/Phoneme Correspondence
c = Larger Letter Units, G/P Correspondence
d = Contextual Clues
e = Response to Error
f = Transfer

In order to compare entry scores and exit scores for central city and suburban teachers, one-way analysis of variance tests were run first on the entry scores (precourse lesson scores). The precourse mean of central city teachers on each behavior was compared with the mean of suburban teachers on that behavior. Then a covariance analysis was applied to those scores differing significantly. Finally, a one-way analysis of variance test was run on those exit scores (postcourse lesson scores) not differing significantly in the pre-test scores in order to determine significant differences between those scores for central city and suburban teachers.

There were no significant differences between central city and suburban teachers in the great majority of behaviors on either the pre- or the post-scores.

A total of 31 behaviors was initially compiled for analysis. The last two (teacher tells and teacher asks) were omitted from the previous comparisons of behavior change because they were not explicit skills of the course, but implicit in the teaching strategies.

The pre-scores of central city and suburban teachers did not differ in 27 (or 87%) of the 31 behaviors. The four behaviors which differed significantly are shown in Table 2. The findings favored the suburban teachers, who were higher in the two positive behaviors (use of contrasting spelling patterns by teacher and by pupil) and lower in the two negative behaviors (pupil isolation of letter sound and teacher telling).

TABLE 2

BEHAVIORS IN WHICH PRESCORES OF CENTRAL CITY AND SUBURBAN TEACHERS DIFFERED SIGNIFICANTLY

	CENTRAL CITY		SUBURBAN			
BEHAVIOR	PRETAPE MEAN	S.D.	PRETAPE MEAN	S.D.	T -RATIO	p
Use of contrasting spelling patterns by teacher	1.32	1.35	2.10	1.19	-2.29	$<.05$
Use of contrasting spelling patterns by pupil	1.04	1.14	1.77	1.20	-2.33	$<.05$
Pupil isolation of letter sound (neg.)	21.56	19.47	11.61	10.26	2.46	$<.05$
Teacher Telling (neg.)	9.40	4.48	6.45	2.67	3.06	$<.01$

3. Does reteaching the lessons increase teacher skill acquisition?

The effect of the reteach treatments was analyzed initially by using the NYBMUL Multivariance program to perform an analysis of covariance on the post-scores, using the pre-scores as covariates. Then a comparison of the effects of the reteach treatments for those behaviors was made using the adjusted (by covariance) scores and a Scheffé contrast computer program written by Morris Lai. (Scheffé contrasts were used instead of Tukey's because of unequal cell size).

Four reteach treatments were applied: reteach all lessons, reteach some lessons, teach to mastery; and no reteach. (For sample description by treatment, see Table 3). The teachers in the four treatments had no significant differences in 24 of the 29 behaviors. Data for the five behaviors showing significant differences are listed in Table 4. The handbooks were revised according to this information.

4. Does teacher use of Minicourse 18 have an effect on pupil reading achievement?

Laboratory developed tests and two subtests (Word Study Skills and Paragraph Meaning) of the Stanford Achievement Test were administered to pupils of Minicourse 18 teachers and also to pupils of control teachers. These pupil data will be reported at the session. An independent study[1] of pupil achievement using the same tests favored use of Minicourse 18. For example, on the two subtests of the S.A.T. where .35 gain was expected in fourteen weeks, the Minicourse 18 pupils scored .54 and .59, compared with .40 and .32, respectively.

Responses to a teacher questionnaire distributed after the course revealed that 65% felt that Minicourse 18 was better than their other inservice courses, 33% said that it was on a par with others, and one teacher (2%) evaluated it as being less valuable.

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1 Strickler, Darryl. Teacher Behavior and Pupil Performance Related to a Training Program for In-Service and Preservice Teachers Based Upon Minicourse Eighteen: Teaching Reading as Decoding. State University of New York at Buffalo, doctoral dissertation, 1972.

TABLE 3

DESCRIPTION OF THE TEACHERS IN THE SAMPLE BY LOCATION AND BY ASSIGNMENT TO RETEACH TREATMENT

TEST SITES	TREATMENTS 1	2	3	4	
Central City					
Chicago, Ill.	5	9			25
Washington, D.C.				11	
Suburban					
Montgomery Co., Md.	3	5		11	31
San Lorenzo, Ca.			12		
	8	14	12	22	56

Reteach Treatments

1. Reteach all lessons
2. Reteach for some lessons
3. Teach to mastery*
4. No reteach

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* The assignment of teachers to Treatment 3 was not random, because that treatment needed to be monitored more closely. As it turned out, Treatments 3 and 4 were quite similar, as most teachers in the mastery group did not reteach their lessons.

TABLE 4

BEHAVIORS DIFFERING SIGNIFICANTLY BY RETEACH TREATMENT
(Adjusted post means using prescores as covariates)

BEHAVIOR	RETEACH TREATMENT								F	p
	ALL		SOME		MASTERY		NO			
	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.		
Tell letter location	8.94	5.50	2.75	4.14	4.83	4.03	2.88	3.21	5.69	.002
Use similar spelling pattern (T)	2.15	.83	1.12	.86	1.00	.60	1.19	.66	4.50	.007
Use similar spelling pattern (P)	1.73	1.04	.86	.77	.70	.49	1.07	.68	3.40	.025
Word from previous parts	3.48	2.14	4.43	3.15	1.78	1.90	2.23	2.27	3.16	.032
Name letter (neg.)	65.29	45.06	46.00	57.03	22.80	23.71	31.95	17.70	5.02	.004

Minicourse 18 has been proven to be effective in changing the behavior of teachers in central city and suburban locations. Some pupil effects will be reported at this session, with the complete analysis detailed in the forthcoming report of the follow-up study of the course. A related study will be conducted beginning in the near future, to assess the effects upon pupil achievement of the decoding, comprehension, and tutoring in reading courses.